



BBG-422ISO

Serial Isolator Interface

Description

The BBG-422ISO (422iso) is a serial isolator and data converter.

The unit has two (2) serial input channels and two (2) serial output channels. The 422iso is sold in two versions. The first is a repeater and can be configured for two independent channels or 1 input to 2 outputs. The second version has an on-board microcontroller to enable translation or baud rate changes from the input to the output. Contact sales@bbginc.com for specific or custom configurations.



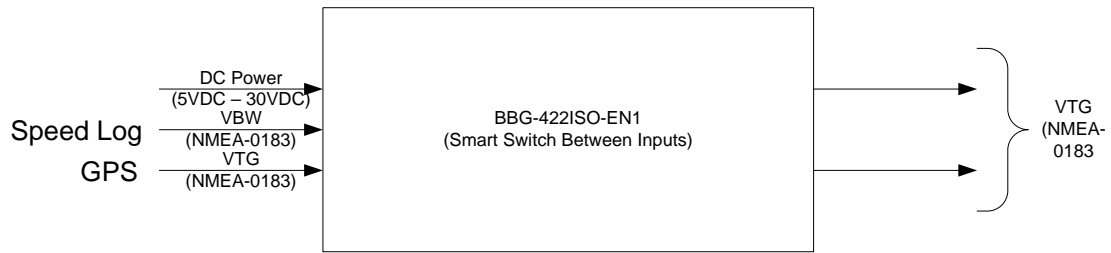
Applications

- Radar Systems (antenna azimuth)
- Navigation Systems (gyrocompass, speed log, course, pitch, and roll)
- Industrial Machine Interfaces
- Meteorology Instruments
- And Many Others

Features

- Two RS-422 Isolated Inputs
- Two RS-422 Outputs
- Wide Power Supply Range
- DIN Rail Mounting
- Easy Screw terminals on Inputs and Outputs
- Up to 115200 Baud Supported

Chart



The BBG-422ISO isolates the input interface(s) from receiving device(s) and provides smart switching of serial inputs, baud rate conversion, protocol translation and other possibilities. The unit is powered by DC power and can accept voltages from 5VDC to 28VDC.

Technical Specifications

Parameter	Value	Units
Input Power		
Power Supply	5 – 28	Volts DC
	250	Milli-Amps
	30 Volts DC	Absolute Maximum DC Voltage
Input		
Channel 1	NMEA, Binary	RS-422
Channel 2	NMEA, Binary	RS-422
Output		
Channel 1	NMEA, Binary	RS-422
Channel 2	NMEA, Binary	RS-422
Temperature Range		
Operating	0 to +50	C°
Storage	-65 to +150	C°
Dimensions		
	1.43 x 3.55 x 2.264	In
	3.63 x 9.02 x 5.75	Cm



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OVERVIEW

The BBG-422ISO is a converter for isolating, reformatting and re-driving RS-422 interfaces. The unit allows multiple devices to be driven from one RS-422/NMEA output and only appear to the driving system as one NMEA load. In addition to being able to change baud rates from input to output the 422iso can send data in a different message format or combine information from multiple sources. The 422iso can also provide for auto-fail over between a primary data source and a secondary backup source of the data. The 422iso passes the primary's data to the output until the interface fails (loss of data or invalid message) and then it switches to the secondary input passing these messages to the output. When the primary input source resumes with valid messages, the unit switches back to passing the primary input's message data to the output.

CONVERTER CONFIGURATION

The 422iso has a clear cover which must be removed to access the switch on the converter's PCB. The switch is labeled S1 and has four configuration switches labeled 1 – 4. The table below details shows an example switch configuration:

Switch	Position	Description
S1 – 1	ON	Output Baud Rate Set to 38400
S1 – 1	OFF	Output Baud Rate Set to 4800
S1 – 2	ON	Channel 2 Input Baud Rate Set to 38400 (TB1 3 – 4)
S1 – 2	OFF	Channel 2 Input Baud Rate Set to 4800 (TB1 3 – 4)
S1 – 3	ON	Channel 1 Input Baud Rate Set to 38400 (TB1 1 – 2)
S1 – 3	OFF	Channel 1 Input Baud Rate Set to 4800 (TB1 1 – 2)
S1 – 4	ON	Send Version Message At Power On
S1 – 4	OFF	No Version Message Sent At Power On

INPUTS/OUTPUTS

The unit mounts on a standard DIN rail and provides an isolated interface:

Inputs

The BBG-422ISO requires DC power. The inputs are optically isolated from the output. The outputs are common to the DC power supply.

Outputs

RS-422/NMEA-0183 output has a common ground with the power supply. In order to maintain isolated outputs, the DC power supply must be isolated from the receiving



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system. The outputs have separate drivers, but in certain configurations of input and output baud rates are not possible based on individual configurations.

Operation

An outline of the BBG-422ISO's operation follows:

Application specific, but generally receives data on one or both of the inputs and sends data on one or both of the outputs.

Status LED:

Solid ON – Usually indicates normal Good operation.

Flashing ON – Usually indicates an abnormal condition but usually still Good data

OFF – Usually indicates a failure condition..

Power LED:

ON – BBG-422ISO has power.

OFF – BBG-422ISO does not have power or on-board regulator has failed.

CH1 & CH2 RX LEDs:

Flashing – Usually indicates data.

OFF – Usually indicates no data.

CONNECTOR LIST

Inputs and outputs are available and can be connected as described below:

I/O CONNECTOR TYPE: DIN Terminal Blocks

CONNECTOR MATE: Ferrules

Signal	TB
CHANNEL 1 A Output VTG Message	TB2 – 1, TB2 – 2
CHANNEL 1 B Output VTG Message	TB2 – 3, TB2 – 4
CHANNEL 1 A Input VBW (Speed Log)	TB1 – 1
CHANNEL 1 B Input VBW (Speed Log)	TB1 – 2
CHANNEL 2 A Input VTG (GPS)	TB1 – 3
CHANNEL 2 B Input VTG (GPS)	TB1 – 4
Power Positive (5 VDC to 28 VDC)	TB2 – 5
Power Negative (Ground/Return)	TB2 – 6



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